Information and communications technology in mental health care

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I wonder, dear reader in 2055, how much your work will depend on information and communications technology (ICT). Even today in general adult psychiatry—a specialty not traditionally associated with technology—ICT is having increasing impact on my life. In a working day, I communicate with other professionals and patients via landline telephone, mobile telephone, SMS messaging, e-mail via my office personal computer and my laptop, paper notes and videoconferencing (through the videoconferencing arises from my interest in telepsychiatry and is not much used by other psychiatrists).

Warnings have been sounded of the dangers of information overload. One local authority in the north of England recently banned its employees from e-mailing on a Thursday, to reduce unnecessary communication and stimulate thinking as to why and when an e-mail is sent. In healthcare, ICT is still underused, although large providers have become alert to the harm caused by misuse. Some organizations have curtailed use of the 'send to all' function on e-mail systems to cut the amount of redundant mail.

The drivers for many ICT applications have been political rather than evidence-based. As I write, the National Health Service is on the verge of delivering the largest ICT project ever undertaken—a nationwide electronic patient record. This incorporates an electronic booking system (again politically driven) that will enable general practitioners to book outpatient appointments for secondary services. The South London and Maudsley NHS Trust has implemented a clinical information management system, known as CCS, which has substantially improved the handling and quality of clinical information. All patient contacts and correspondence from nursing, medical, and social care professionals and even the local accident and emergency liaison service are recorded digitally. The duplicate paper records are becoming increasingly redundant. That CCS was fully embedded became obvious when the system crashed and a community mental health team protested loudly. The NHS is addressing the issue of data control and patients in the Trust are now asked, at inception, who should be allowed access to their personal data. The major weakness of CCS is that it is not, and will not be, linked to the local NHS general practices. The platform on which it is built is not suitable for operating with larger numbers and cannot be rolled out. This system will be subsumed by the new NHS-wide electronic patient record.

Telepsychiatry

Telepsychiatry has so far had little impact on clinical practice; fifty years of telepsychiatry and eMental health applications have been reviewed by Wootton, Yellowlees and McLaren[1]. Telepsychiatry applications tend to be most useful in settings with low population density, geographical barriers to transport, difficulties with professional recruitment and an advanced communications infrastructure. Benefits in terms of health gain for populations have yet to be shown.

Videoconferencing, the preferred medium for telepsychiatry, is at least half a century old. In 1955, Wittson and Dutton[2,3] reported from Nebraska on the use of a closed-circuit television system to transmit, via a microwave link, live therapy and education sessions. They observed user responses and speculated on how the medium might alter the content of the interaction and the nature of the relationships established. This was the template for the subsequent fifty years of telepsychiatry research.

Even in remote areas, telepsychiatry applications have had a mixed record. A Telemedicine Centre at the University of Tromsø, in northern Norway,[4,5] operates successfully in many specialties including psychiatry; and the potential of videoconferencing to deliver mental health care into prisons is now beginning to be realized in the USA.[6] The telephone is often used by professionals to follow up patients with whom they already have a therapeutic relationship. Simon *et al.*[7] reported a randomized controlled trial comparing strategies for managing depression in primary care. Feedback based on algorithms was no better than usual care, but significant improvements were seen when feedback was coupled with systematic telephone follow-up and care management. Such results have been largely ignored and the use of the telephone for clinical tasks has yet to be exploited systematically.

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Figure 1. **Communicating by videophone**

In the South London and Maudsley NHS Trust, a videoconferenced psychiatry clinic has been running for over five years between a mental health centre and a general practice surgery[8] and has been used for outpatient psychiatry, emergency assessments, discharge planning and psychotherapy. This is over an ISDN link and the image pixelates with rapid movement—rather like looking through cloudy glass. Facial expression and posture can be seen but tears cannot. Use of this service is still low, and an attempt to roll it out to several other practices in the area failed because of lack of referrals. This did not appear to be a consequence of the poor image quality, since patients who have used the system have rated this as satisfactory.

Applications that have been more successful for videoconferencing within the same NHS Trust have included discharge planning meetings between the inpatient ward and its community mental health team[9] and its use for administrative meetings between the ward and team managers (lessening their need to travel). One of the applications that foundered was a link between an acute ward and a psychiatric intensive care unit in another hospital about six miles away.[10] This failed because of staff reluctance to use it.

Some of the most often cited reasons for professional reluctance to use videoconferencing for clinical communication with patients are concern that the patient will be upset or that the interaction is distorted in clinically significant ways. This view is challenged by the following comment from a patient who used the system:

> 'The video system removed a lot of body language. I know from the relatively high level of telephonic communication in my job that I find relatively body-language free communication in stressful, difficult or confrontational situations to be much easier to deal with than face-to-face meetings. I think this is because my efforts (over which I seem to have little control) to interpret facial expression and body language as well as words and tone of voice cause me a good deal of anxiety. You might remember on one occasion that I only mentioned that your image had frozen some time earlier. I was really quite happy just with voice communication. In trying circumstances (such as reliving or living part of a depressive episode) there are very few people I want to be in the same room with. I can feel claustrophobic and extremely resentful of others' physical presence. This is not an issue (or as much of an issue) if the other person is not physically present.'

ICT has the potential to deliver psychotherapeutic interventions. A computerized cognitive behaviour therapy system called Beating the Blues is available commercially and used by many general practices as an alternative to face-to-face therapy. At the Priory Ticehurst House, a trial is underway looking at the use of Beating the Blues to supplement and augment face-to-face therapy. The system is applicable for the self-monitoring and educational aspects of cognitive behaviour therapy, and may reduce the amount of face-to-face contact required to complete therapy.

ICT in 2055

Here are my guesses about your world, dear reader in 2055. Though the demise of the audio-only telephone has often been predicted, I suspect you will still be using it for clinical contact and self-help support; there is something special about its capacity for anonymity and intimacy. (Today, we still use the telephone widely even when videophones are available.) In fifty years' time, an integral part of professional training will be communication management. Health workers will use software that filters and organizes incoming data from multiple media and prioritizes and presents it in ways controlled by themselves or their employers.

Allen *et al.*[12] estimated that 46% of traditional home health visits in the USA could be done by telemedicine. By 2055, for the majority of consultations, mental health patients will access services from the home. Professionals will communicate by live videoconferencing. Routine tasks will be programmed into store-and-forward interactive three-dimensional video projected into the living room.

By 2055, bandwidth, now prohibitively expensive for health applications, will no longer be an issue; there will be few if any constraints on the quantity or quality of data that can be transmitted or stored. In one of the earliest ever telephone calls, an assistant of Alexander Graham Bell who had spilled acid used the new communicating machine to call for help. It offered previously unimagined speed of contact. Until we have the ability to transport individuals at the speed of data, everything to come will be just extra

knobs and whistles, transmitting data faster and more cheaply. We have the technology. The challenge for the next fifty years will be to make good use of it.

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